

**Notice of Allowability**

Application No.

10/660,844

Examiner

Saqib J. Siddiqui

Applicant(s)

JEDDELOH, JOSEPH M.

Art Unit

2117

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 6/25/07.
2. ☒ The allowed claim(s) is/are 1-18, 23-31 & 36-44.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 6/25/07
- ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- ☐ Notice of Informal Patent Application
- ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 07/13/07
- ☒ Examiner's Amendment/Comment
- ☒ Examiner's Statement of Reasons for Allowance
- ☐ Other \_\_\_\_\_

## DETAILED ACTION

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Edward Bulchis on 07/12/07.

The application has been amended as follows:

As per claim 36:

A method for performing signal timing testing on a memory system having a memory hub coupled to a plurality of memory devices, the method comprising: generating corresponding testing signals in the memory hub; coupling the corresponding testing signals from the memory hub to the memory devices while varying the relative timing between when the corresponding testing signals are applied to the memory devices over a range of relative timing; generating output signals in the memory devices resulting from the testing signals; coupling the output signals from the memory devices to the memory hub; and evaluating the output signals in the memory hub to determine if the memory devices properly responded to the testing signals.

### ***Allowable Subject Matter***

The following is an examiner's statement of reasons for allowance: The prior art of record does not teach the following limitations:

The present invention includes a method for performing signal timing testing on a memory system having a memory hub coupled to a plurality of memory devices, the method comprising: generating corresponding testing signals in the memory hub; coupling the corresponding testing signals from the memory hub to the memory devices while varying the relative timing between when the corresponding testing signals are applied to the memory devices over a range of relative timing; generating output signals in the memory devices resulting from the testing signals; coupling the output signals from the memory devices to the memory hub; and evaluating the output signals in the memory hub to determine if the memory devices properly responded to the testing signals.

The prior arts of record do not teach altering the relative timing between corresponding first and second test signals over a range, during the testing of a plurality of memory devices. Claim 36 alters the relative timing between corresponding test signals over a range during a specific test execution. However, prior arts of record teach altering relative timing of signals during different tests and not during a specific test execution and over one particular range of a specific test execution.

For instance, Lin teaches testing a memory device while latching a plurality of testing signals using one two different clocks. However, the timing between two corresponding signals is not altered during a test execution over a range. Further, Nadeau-Dostie teaches a scan test of memory elements in different time domains but the relative timing between two corresponding test signals is not altered over a specific range.


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Hence, the prior arts of record fail to anticipate or render obvious the claimed inventions. Thus claims 1-18, 23-31 and 36-44 are allowable over the prior arts of record.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saqib J. Siddiqui whose telephone number is (571) 272-6553. The examiner can normally be reached on 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques Louis-Jacques can be reached on (571) 272-6962. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Saqib Siddiqui  
Art Unit 2138  
07/13/2007

  
CYNTHIA BRITT  
PRIMARY EXAMINER  
7-11-07